

Methodology

Scope

The Academic Libraries Survey (ALS) was fielded in fall 2000 as a Web-based survey. This survey collects data on the libraries in all accredited degree-granting institutions of higher education and on the libraries in non-accredited institutions with a program of four years or more. The Academic Libraries data file and this report are limited to 2-year and 4-year degree-granting postsecondary institutions.

Coverage and response rates

Of the 3,923 2-year and 4-year degree-granting postsecondary institutions⁵ in the United States, there were 156 institutions that did not have their own library but shared a library with one or more of 88 other institutions. Those 156 institutions were excluded from the survey. There were also 240 institutions that were found to be out of scope because they did not have an academic library as defined by the survey. Thus, there were 3,527 degree-granting postsecondary institutions in the 50 states and the District of Columbia that had academic libraries in 2000. The response rate among these 3,527 institutions was 87 percent.

Of these 3,527 college and university libraries, 443, or 13 percent, were unit nonrespondents. Methodology tables A and B present further information on response rates. The first three rows of table A present the number of academic libraries and the number and percentage of nonrespondents and respondents by level and control of institution. The remaining rows show the number and percentage of libraries responding for each item.

Data collection procedures

The ALS data are collected and processed for NCES by the U.S. Bureau of Census Government Division. In 1990, an NCES/IPEDS (Integrated Postsecondary Education Data System) Academic Libraries Survey Improvement Project was begun with the assistance of the National Commission on Libraries and Information Science (NCLIS) and the American Library Association's Office of Research and Statistics (ALA-ORS). The project identified a librarian in each state to work with IPEDS coordinators in submitting library data to NCES. For the 1990, 1992, 1994, 1996, and 1998 data collections, many of those library representatives took major responsibility for collecting data in their states. The 2000 ALS was no longer a component of the IPEDS package of surveys. ALS data can still be linked to IPEDS institutional data using the institution's UNITID number. For the 2000 Web-based data collection, state-level library representatives were available to promote prompt responses from librarians and to assist in problem resolution when anomalies were discovered in responses from the academic librarians.

The Web-based data collection application features some internal consistency edit checks as well as a few range checks and summation checks.

⁵ Did not include certificate granting postsecondary institutions if the institution did not also grant any degrees.

Editing and imputation

The edit checks provide warnings as the data are being keyed and an edit/error report after the data have been keyed. The types of edit checks are listed below:

- *Summations* - reported totals are compared with the sums of the constituent data items. If they are not equal, an error message is generated.
- *Relational edit checks* - the program compares responses entered in one section of the questionnaire with responses entered in another section of the questionnaire for consistency. For example, if a librarian reports that books and bound serials were added during the fiscal year, the program would look for some expenditure to be reported for books and bound serials. If the former is reported without the latter, an error message is generated. Another example is that the number of volumes of print materials added during the fiscal year cannot exceed the total number of volumes held at the end of the fiscal year.
- *Range checks* – an error message is generated if responses are above or below expected amounts. For example, if the average salary of librarians is less than \$20,000 or greater than \$100,000, or if any of the collections data (except for volumes held at the end of the year) is greater than 1,000,000, an error message is generated. If the reported hours of service is fewer than 10 hours per week or greater than 168 hours per week, an error message is generated.

After the data were received by NCES from every state, the data files were merged and general edits and imputations were performed. Some examples of general edits and imputations follow:

- If a total was blank or zero, but there were one or more positive subtotals, the total was changed to equal the sum of the subtotals.
- If a value or item was missing and prior-year (1998) data were available, the data were used to impute a value for the missing item. A ratio adjustment was done, taking into account the average amount of change that occurred in the variable within the imputation stratum to which the institution was assigned. These ratios were then applied to the prior-year data used for imputation. The strata were based upon the highest level of degree (doctor's, master's, bachelor's, and associate), and control and size of institution. The four control/size imputation categories were: (1) public, less than median number of degrees for institutions in that category; (2) public, equal to or greater than the median; (3) private, less than the median; and (4) private, equal to or greater than the median.
- If prior-year data were unavailable, for purposes of imputation, the Academic Libraries file was divided into eight imputation classes, and averages for the class were applied.
- To determine the imputed value for a subtotal, the average estimate was calculated across the set of respondents in each class, including ones for which the total was obtained by adding the subtotals, but excluding those for which the sum of the subtotals did not originally equal the total. The average subtotal value was divided by the average

total value within each imputation class to obtain an average proportion. The average proportion was multiplied by the reported total to obtain the imputed subtotal value.

- For total staff (part B, line 8 on the survey form) and total expenditures (part C, line 24), if the total and all subtotals were blank or zero, they were imputed by taking the average of the imputation class.
- Some values were imputed for all data items in parts B through F, except contributed services staff (part B, line 6 on the survey form) and employee fringe benefits (part C, line 25b). These categories were applicable to only a few institutions. Tables 1 to 11 and 13 reflect imputed data.
- Values were not imputed for electronic services (part G). Table 12, which reports percentages, does not include imputed data.

The procedure of using a ratio adjustment to prior-year data for imputation represented a change from that followed in cycles prior to 1996 and may have resulted in some small differences in estimates. The change for 1996 to the use of ratio adjustments allowed use of information about actual changes in the data, which enabled more accurate imputation. While checks indicate that the effect of the change in imputation procedure was not large, caution should be exercised in making comparisons with pre-1996 or earlier reports. The reader is referred to the NCES report on the *Status of Academic Libraries in the United States: Results from the 1996 Academic Library Survey with Historical Comparisons* (NCES2001301). This report uses data from institutions reporting in each reference year to make comparisons over time.

Classifications used in the report

The tables in this report present the data by state; control (public, private); level of highest degree offered--a categorization based on the IPEDS classification of the highest degree awarded by the institution (doctor's, master's, bachelor's, and less than 4-year); size of full-time equivalent (FTE) enrollment (less than 1,500; 1,500 to 4,999; 5,000 or more); and the 1994 Carnegie Classification.

The "A" series of tables in this publication report the data by state. The "B" series of tables report data by control, level, size, and Carnegie Classification.

Caution on the analysis of data by state and by level and control of institution. This is a descriptive report that focuses on information from a census of academic libraries in 2000. The presentation of numbers, proportions, and percentages is descriptive only of libraries in the period referenced. While data were imputed for nonresponse, the number of unit nonresponses can vary by state and affect the reliability of the state data. See Methodology tables A and B for item response rates and overall response rates by state. Methodology table B presents the distribution of the set of unit nonrespondents by state and by level and control of institution. Methodology table C gives the number of academic libraries by state, level, and control of institution. The data user should be especially cautious in using data at a level of detail where the nonresponse rate was 15 percent or greater.